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CENTRAL FAX CENTER****FEB 23 2006****FACSIMILE TRANSMISSION
TO THE UNITED STATES PATENT AND TRADEMARK OFFICE****571-273-8300**

TO: EXAMINER Andrew W. JOHNS
ART UNIT 2621
SERIAL NO. 10/028,388

FROM: David BARNES, Reg. 47,407

PHILIPS ELECTRONICS
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FEB 23 2006

PTO/SB/64 (08-04)

Approved for use through 07/31/2006. OMB 0851-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT
ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(b)**

Docket Number (Optional)

FR000143

First named inventor: Jacques BREITENSTEIN

Application No.: 10/028,388

Art Unit: 2821

Filed: DECEMBER 21, 2001

Examiner: Andrew W. JOHNS

Title: METHOD OF PROCESSING IMAGES

Attention: Office of Petitions

Mail Stop Petition

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

FAX (703) 872-9306

NOTE: If information or assistance is needed in completing this form, please contact Petitions Information at (703) 305-9282.

The above-identified application became abandoned for failure to file a timely and proper reply to a notice or action by the United States Patent and Trademark Office. The date of abandonment is the day after the expiration date of the period set for reply in the office notice or action plus an extensions of time actually obtained.

APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS APPLICATION

NOTE: A grantable petition requires the following items:

- (1) Petition fee;
- (2) Reply and/or issue fee;
- (3) Terminal disclaimer with disclaimer fee - required for all utility and plant applications filed before June 8, 1995; and for all design applications; and
- (4) Statement that the entire delay was unintentional.

1. Petition fee
☐ Small entity-fee \$ _____ (37 CFR 1.17(m)). Applicant claims small entity status. See 37 CFR 1.27.

☒ Other than small entity - fee \$ 1,500.00 (37 CFR 1.17(m))
2. Reply and/or fee

A. The reply and/or fee to the above-noted Office action in the form of Response to Notice of Non-Compliant Amendment (Identify type of reply):

- ☐ has been filed previously on _____
- ☒ is enclosed herewith.

B. The issue fee and publication fee (if applicable) of \$ _____

- ☐ has been paid previously on _____
- ☐ is enclosed herewith.

(Page 1 of 2)

This collection of information is required by 37 CFR 1.137(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

02/24/2006 NNGUYEN1 00000130 141270 10028388

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PTO/SB/64 (06-04)

Approved for use through 07/31/2008. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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3. Terminal disclaimer with disclaimer fee

☒ Since this utility/plant application was filed on or after June 8, 1995, no terminal disclaimer is required.

☐ A terminal disclaimer (and disclaimer fee (37 CFR 1.20(d)) of \$ _____ for a small entity or \$ _____ for other than a small entity) disclaiming the required period of time is enclosed herewith (see PTO/SB/63).

4. STATEMENT: The entire delay in filing the required reply from the due date for the required reply until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional. [NOTE: The United States Patent and Trademark Office may require additional information if there is a question as to whether either the abandonment or the delay in filing a petition under 37 CFR 1.137(b) was unintentional (MPEP 711.03(c), subsections (III)(C) and (D)).]

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.


Signature

February 23, 2006

Date

David BARNES
Typed or printed name

47,407

Registration Number, if applicable

Philips Intellectual Property & Standards, P.O. Box 3001
Address

(914) 333-9693

Telephone Number

Briarcliff Manor, NY, 10510-8001
Address

Enclosures: ☒ Fee Payment☒ Reply☐ Terminal Disclaimer Form☒ Additional sheets containing statements establishing unintentional delay☒ Other: Authorization to Charge to Deposit Account No. 14-1270

CERTIFICATE OF MAILING OR TRANSMISSION (37 CFR 1.8(a))

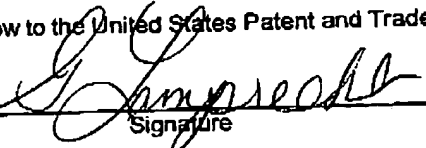
I hereby certify that this correspondence is being:

☐ Deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Petition, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

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FEB. 23 2006

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G. Lamprecht

Typed or printed name of person signing certificate

(Page 2 of 2)

FEB 23 2006

**Petition for Revival Under 37
CFR 1.137(b) - Statements on
Delay - Unintentional
Abandonment**

To Commissioner For Patents
P.O. Box 1450
Mail Stop PETITIONS
Alexandria, VA 22313-1450

Application Number	10/028,388
Filing Date	December 21, 2001
First Named Inventor	Jacques BREITENSTEIN
Group Art Unit	2621
Examiner Name	Andrew W. JOHNS
Atty. Docket Number	FR000143

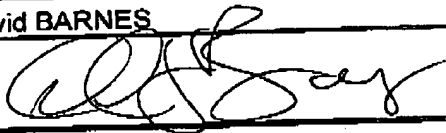
Dear Sir:

Responsive to the Notice of Abandonment dated February 9, 2006, Applicants Petition for Revival of this application, since abandonment was unintentional. This abandonment stemmed from not responding to the Notice of Non-Compliant Amendment dated July 11, 2005. Applicants never received the Notice of Non-Compliant Amendment from the US Patent Office, and upon receipt of the Notice of Abandonment, downloaded the Non-Compliant Notice from PAIR.

Enclosed is a Petition for Revival of an Application for Patent Abandoned Unintentionally Under 37 CFR 1.137(b) with an Authorization to Charge to Deposit Account No. 14-1270, and a Response to the Notice of Non-Compliant Amendment dated July 11, 2005.

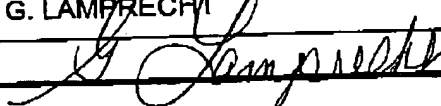
Please charge any fees, except for the Issue Fee, and credit any overpayment, to Deposit Account No. 14-1270.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print Type)	David BARNES	Registration No. (Attorney/Agent)	47,407
Signature		Date	22 February 2006

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this is being deposited with the U.S. Postal Service with sufficient postage as first class mail. In an envelope addressed to: Commissioner For Patents, P.O. BOX 1450 Alexandria, VA 22313-1450, or facsimile transmitted to the U.S. Patent and Trademark Office tel. # 703-872-9306 on the date below:

Name (Print Type)	G. LAMPRECHT	Date	February 23, 2006
Signature			

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Rev. July 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED
CENTRAL FAX CENTER

FEB 23 2006

In re Application of

Atty. Docket

Jacques BREITENSTEIN et al

FR000143

US Appln. Serial No. 10/028,388

Group Art: 2621

Filed: DECEMBER 21, 2001

Ex.: A.W. JOHNS

METHOD OF PROCESSING IMAGES

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450AUTHORIZATION PURSUANT TO 37 CFR §1.136(a)(3)
AND TO CHARGE DEPOSIT ACCOUNT

Sir:

The Commissioner is hereby requested and authorized to treat any concurrent or future reply in this application requiring a petition for extension of time for its timely submission, as incorporating a petition for extension of time for the appropriate length of time.

Please charge any additional fees which may now or in the future be required in this application, including extension of time fees, but excluding the issue fee unless explicitly requested to do so, and credit any overpayment, to Deposit Account No. 14-1270.

Respectfully submitted,

By David BARNES, Reg. 47,407
Attorney
(914) 333-9693

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**RECEIVED
CENTRAL FAX CENTER****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of

Jacques BREITENSTEIN et al

US Appln. Serial No. 10/028,388

Filed: DECEMBER 21, 2001

METHOD OF PROCESSING IMAGES

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Atty. Docket

FR000143

Group Art: 2621

Ex.: A.W. JOHNS

FEB 23 2006**RESPONSE TO NOTICE OF NON-COMPLIANT AMENDMENT**

Sir:

In response to the Notice of Non-Compliant Amendment dated July 11, 2005, please amend the application as follows.

Responsive to the Office Action dated January 3, 2005,

Applicants present the following amendments and remarks.

In the Claims:

The following claims listing supercedes all prior listings.

1. (Currently Amended) A method of processing images ~~in images~~ comprising curvilinear structures, the method comprising the following ~~parallel~~ steps of:

~~_____ a step of filtering said images;~~
~~_____ a decision step intended to select theselecting~~
~~pixels within said imagesof the image pertaining to an interesting~~
~~curvilinear structure, and~~
~~_____ said method being characterized in that the decision step~~
~~comprises, in parallel, a sub step of estimating atthe direction of~~
~~each image pixel and as well as a sub step of analyzing atthe~~
~~connectivity of neighboring pixels based on the estimated their~~
~~directions for each said image pixel, and~~
~~- _____ at the end of the sub step of estimating the direction of~~
~~each image pixel, and a sub step of selecting groups of image~~
~~pixels as a function of the result of saidsub step of analyzing the~~
~~connectivity of neighboring pixels based on their directions, at~~
~~the end of said step of filtering.~~

2. (Currently Amended) A method of processing images as claimed in claim 1, ~~wherein the step characterized in that said step of~~
~~filtering said images further comprises a step of comprises a sub-~~
~~step of selecting pixels, the selected pixels of an image being~~
~~those that have displaying a contrast which is larger than X times~~
~~atthe variance of the noise in the image, where X isbeing a user-~~
~~adjustable parameter.~~

3. (Currently Amended) A method of processing images as claimed in claim 1, ~~wherein characterized in that said step of filtering said~~
~~images uses two neighborhoods (N1) and (N2), of a given pixel,~~

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wherein a ~~the~~ gap (GAP) extending between these neighborhoods
is ~~being~~ user-adjustable.

4. (Currently Amended) A method of processing images as claimed in claim 3, wherein a ~~characterized in that the~~ height (H) and a ~~the~~ length (L) of said neighborhoods are adjustable ~~user-adjustable~~.

5. (Currently Amended) A method of processing images as claimed in claim 1, wherein ~~characterized in that~~ said steps ~~sub-step~~ of analyzing the connectivity of neighboring pixels based on their directions uses a neighborhood of a given pixel, which ~~this~~ neighborhood extends ~~extending~~ in the direction of the pixel considered and, this direction being ~~determined during the steps~~ ~~said~~ ~~sub-step~~ of estimating the direction of each pixel of the image.

6. (Currently Amended) A method of processing images as claimed in claim 5, wherein ~~characterized in that the~~ length of said neighborhood is adjustable ~~user-adjustable~~.

7. (Currently Amended) A method of processing images as claimed in claim 1, wherein the step of selecting ~~characterized in that said~~ ~~sub-step of selecting groups of pixels uses an adjustable~~ ~~user-adjustable~~ parameter M, which ~~this~~ parameter M allows ~~allowing~~ computation of a ~~the~~ minimal sum of contrasts of the pixels of a given group required for the ~~this~~ group to be selected.

8. (Currently Amended) A method of processing images as claimed in claim 1, further including:

intended to detect artery anomalies, characterized in
that it further comprises the steps of:

skeletonizing said images to ~~for extracting~~ a skeleton of curvilinear structures,

measuring ~~artery~~ diameters of arteries found in said skeletonized images,

detecting arterial anomalies~~taking decisions~~ on the basis of the diameters and ~~rules predefined rules~~by an operator.

9. (Currently Amended) A method of processing images, comprising the steps of:

~~acquiring intended to detect artery anomalies in three dimensions,~~ having at least a first digitized image and a second digitized image of an the same artery to be analyzed for artery anomalies,
~~as inputs, characterized in that it comprises, in series, a method of:~~

~~processing images as claimed in claim 1, applied to the first and the second digitized image, for giving a first and a second processed image, and the steps of:~~

filtering said first and second digitized images;
selecting pixels within said filtered, digitized images pertaining to a curvilinear structure, and

estimating a direction of each selected pixel and analyzing a connectivity of neighboring pixels based on the estimated directions for each selected pixel, and

selecting groups of pixels as a function of the result of said analyzing,

~~skeletonizing, applied to the first and the second processed images to extract,~~ for extracting a first skeleton of the curvilinear structures of the first processed image, and a second skeleton of the curvilinear structures of the second processed~~processed image,~~

reconstructing a 3D image of the artery, based on the first and the second processed image and their skeletons, for giving a 3D image of the artery,

measuring artery diameters, within based on the
reconstructed 3D image of the artery, and
determining the existence of artery anomalies based on
said taking decisions on the basis of the diameters and rules
predefined by an operator.

10. (Currently Amended) A computer readable medium comprising a
set of computer readable instructions, which computer readable
instructions may be processed by a computer to implement program
which can be carried out by means of a processor, intended to
perform a method of processing images as claimed in claim 1.

11. (Currently Amended) An image-processing system comprising a
programmable computer programmed with a set of instructions for
carrying out the method as set forth in claim 1, including intended
to perform a computer program as claimed in claim 10, or a circuit
intended to perform the method of processing images as claimed in
any one of claims 1 to 9, a device for projecting images processed
thereby, and in accordance with said method and possibly a device
for storing said images.

12. (Cancelled)

REMARKS

Applicants respond hereby to the outstanding Office Action mailed January 3, 2005, in this application.

By the Request To Make Drawing Amendments that accompanies this Amendment, applicants have amended drawing Figs. 1, 5a, 5b, 6a and 7 substantially in accordance with the Examiner's suggestions at paragraph 1 of the office action. Applicants believe that all of the figures now conform to proper US Patent practice, and respectfully request withdrawal of the paragraph 1 drawing objections.

Each of the pending claims 1-11 are amended hereby; claim 12 is cancelled without prejudice of subject matter. No new matter is introduced.

Response To Rejections Under 35 USC § 101

Claim 10 was rejected as non-statutory under 36 USC § 101. Applicants have amended claim 10 to address the issues raised by the Examiner at paragraph 3 of the Office Action. Claim 10 now sets forth a computer readable medium comprising a set of computer readable instructions, which computer readable instructions may be processed by a computer to implement a method of processing images as claimed in claim 1. Accordingly, applicants respectfully assert that claim 10 now conforms to section 101, is statutory, and request withdrawal of the rejection under 35 USC 101.

Response To Rejections Under 35 USC § 112

Claims 1-12 were each rejected under 35 USC § 112, second paragraph, as indefinite, for the reasons stated at paragraph 5 of the Office Action. In response, applicants have amended claim 1 considerably to render the claim language more understandable, and more in conformance to good US practice. For that matter, claim 11 has been amended to address the Examiner's comments, and each of claims 1 and 11 are believed to comply with the second paragraph of Section 112. Hence, applicants respectfully request the withdrawal of the rejection of claims 1 and 11, and claims 2-10 which depend

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from claim 1.

Response To Rejections Under 35 USC § 102

Claim 10 was rejected under 35 USC § 102(b) in view of US Patent No. 5,859,929 to Zhou. That is, the Examiner states that while Zhou teaches a computer program carried out by processing means, that the language of claim 10 (before amendment hereby) was merely a recitation of intended use. However, after amendment, claim 10 now recites more than the intended use of the invention.

Applicants, therefore, respectfully assert that claim 10 as amended is not unpatentable under 35 USC § 102(b) in view of Zhou, and request withdrawal of the same claim rejection.

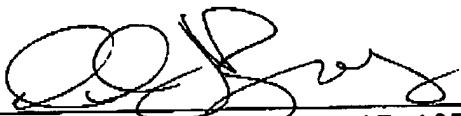
Claims 11 and 12 were also rejected under 35 USC § 102(b) as anticipated by US Patent No. 5,809,105 to Roehm. With respect to claim 11, the Examiner asserts that it merely recites an intended use, and while Roehm does not include all of the recitations of claim 11, it includes all positive limitations.

In response, applicants respectfully assert that claim 11 as amended now recites all limitations as positive limitations, and is therefore novel in view of Roehm under Section 102(b), and request withdrawal of the rejection of claim 11; claim 12 has been cancelled.

Allowance of pending claims 1-11, and passage to issue of the application is respectfully requested.

Please charge any additional fees which may now or in the future be required in this application, including extension of time fees, but excluding the issue fee unless explicitly requested to do so, and credit any overpayment, to Deposit Account No. 14-1270.

Respectfully submitted,

By 
David BARNES, Reg. No. 47,407
Attorney
(914) 333-9693

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Atty. Docket

Jacques BREITENSTEIN et al

FR000143

US Appln. Serial No. 10/028,388

Group Art: 2621

Filed: DECEMBER 21, 2001

Ex.: A.W. JOHNS

METHOD OF PROCESSING IMAGES

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST TO MAKE DRAWING AMENDMENTS

Sir:

Enclosed are copies of the amended drawing sheets containing drawing Figs. 1, 5a, 5b, 6a and 7, which are now believed to fully conform to the Patent Office Rules, noting "REPLACEMENT SHEET". No new matter has been added.

Approval of the drawing corrections is respectively requested.

Respectfully submitted,

By: 

David BARNES, Reg. 47,407
Attorney
(914) 333-9693

Encls.